

Metadata for Congaree Swamp National Monument, Field Plots Data Base for Vegetation Mapping

Identification_Information:

Citation:

Citation_Information:

Originator: USGS, Biological Resources Division, Center for Biological Informatics

Publication_Date: 200110

Title: Congaree Swamp National Monument Field Plots Data Base for Vegetation Mapping

Geospatial_Data_Presentation_Form: database

Series_Information:

Series_Name: USGS-NPS Vegetation Mapping Program

Issue_Identification: Congaree Swamp National Monument

Publication_Information:

Publication_Place: Denver, CO

Publisher: USGS, Biological Resources Division, Center for Biological Informatics

Other_Citation_Details: Created under contract to the USGS-BRD-CBI by The Nature Conservancy.

Online_Linkage: <http://biology.usgs.gov/npsveg/cosw/fielddata.html>

Description:

Abstract:

Vegetation field plots at Congaree Swamp National Monument were visited, described, and documented in a digital database. The database consists of 2 parts - (1) Physical Descriptive Data, and (2) Species Listings.

Purpose:

The vegetation plots were used to describe the vegetation in and around Congaree Swamp National Monument and to assist in developing a final mapping classification system.

Supplemental_Information:

On June 30, 1983, Congaree Swamp National Monument became an International Biosphere Reserve.

Congaree is noted for containing one of the last significant stands of old growth bottomland hardwood forest, over 11,000 acres in all. The Monument contains over 90 species of trees, 16 of which hold state records for size. Included in this list of records is a national record sweet gum with a basal circumference of nearly 20 feet.

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 199606

Ending_Date: 199609

Currentness_Reference: Dates of field sampling

Status:

Progress: Complete

Maintenance_and_Update_Frequency:

None Planned

99.1.5 Geographic Extent

Spatial_Domain:

Description_of_Geographic_Extent:

Congaree Swamp National Monument is located approximately 15 miles southeast of Columbia, the

USGS-NPS Vegetation Mapping Program
Congaree Swamp National Monument

state capitol of South Carolina. Old Bluff Highway (old Highway 48) lies just north of the Monument boundary. The eastern boundary is located just northwest of the confluence of the Congaree and Wateree Rivers. The Monument extends west to where Cedar Creek and Myers Creek join.

99.1.5.2 Bounding Rectangle Coordinates

Bounding_Coordinates:

West_Bounding_Coordinate: -80.85
East_Bounding_Coordinate: -80.67083
North_Bounding_Coordinate: 33.84167
South_Bounding_Coordinate: 33.75

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: National Park Service
Theme_Keyword: U.S. Geological Service
Theme_Keyword: The Nature Conservancy
Theme_Keyword: Aerial Information Systems
Theme_Keyword: Center for Biological Informatics
Theme_Keyword: land cover
Theme_Keyword: vegetation
Theme_Keyword: community
Theme_Keyword: association
Theme_Keyword: sampling plots
Theme_Keyword: Environmental System Research Institute

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: Congaree Swamp National Monument
Place_Keyword: South Carolina
Place_Keyword: USA

Stratum:

Stratum_Keyword_Thesaurus: None
Stratum_Keyword: Upland Zone
Stratum_Keyword: Transitional Zone
Stratum_Keyword: Floodplain Zone
Stratum_Keyword: Congaree River Bank and Levee Zone
Stratum_Keyword: Disturbance Areas

Taxonomy:

Keywords/Taxon:

Taxonomic_Keyword_Thesaurus: None
Taxonomic_Keywords: Plant Communities
Taxonomic_Keywords: National Vegetation Classification System

Taxonomic_System:

Classification_System/Authority:

Classification_System_Citation:

Citation_Information:

Originator:

United States Department of the Interior National
Biological Survey and National Park Service

Publication_Date: 19941101

Title:

Standardized National Vegetation Classification
System

Edition: Version 1

Geospatial_Data_Presentation_Form: Document - Classification System

USGS-NPS Vegetation Mapping Program
Congaree Swamp National Monument

Series_Information:

Series_Name: NBS/NPS Vegetation Mapping Program

Issue_Identification: Final Draft

Publication_Information:

Publication_Place: Redlands, California

Publisher: ESRI

Other_Citation_Details: Created under contract to the USGS-BRD-CBI by The Nature Conservancy.

Classification_System_Modifications:

The criteria differs primarily in that the height and density variables were not mapped at Congaree Swamp. Instead, two additional variables were addressed:

pre-hurricane Hugo community types and areas of pine that have been logged since the time of the 1976 aerial photography.

Identification_Reference:

Citation_Information:

Originator:

United States Department of the Interior National Biological Survey and National Park Service

Publication_Date: 19941101

Title:

Standardized National Vegetation Classification System

Edition: Version 1

Geospatial_Data_Presentation_Form: Classification System

Series_Information:

Series_Name: NBS/NPS Vegetation Mapping Program

Issue_Identification: Final Draft

Publication_Information:

Publication_Place: Redlands, California

Publisher: ESRI

Other_Citation_Details: Created under contract to the USGS-BRD-CBI by The Nature Conservancy.

Taxonomic_Procedures:

See "Photo Interpretation Report, BRD/NPS Vegetation and Inventory and Mapping Program, Congaree Swamp National Monument," October 12, 1998 <http://biology.usgs.gov/npsveg/cosw/pi_rpt.pdf>

General_Taxonomic_Coverage:

Vegetation Alliances of the National Vegetation Classification System (October 1995)

Taxonomic_Classification:

Taxon_Rank_Name: Kingdom

Taxon_Rank_Value: Plantae

Applicable_Common_Name: s: Plants

Access_Constraints: None

Use_Constraints:

Any person using the information presented here should fully understand the data collection and compilation procedures, as described in these metadata, before beginning analysis. The burden for determining fitness for use lies entirely with the user. For purposes of publication or dissemination, citations should be given to the U.S. Geological Survey and the National Park Service

Point_of_Contact:

Contact_Information:

USGS-NPS Vegetation Mapping Program
Congaree Swamp National Monument

Contact_Person_Primary:

Contact_Person: USGS-NPS Vegetation Mapping Program Coordinator

Contact_Organization:

U.S. Geological Survey, Biological Resources
Division, Center for Infomatics

Contact_Address:

Address_Type: Mailing Address

Address: USGS

Address: Biological Resources Division

Address: Center for Infomatics

Address: PO Box 25046, DFC, MS302

City: Denver

State_or_Province: Colorado

Postal_Code: 80225-0046

Country: USA

Contact_Voice_Telephone: (303) 202-4220

Contact_Facsimile_Telephone: 303-202-4229

Contact_Facsimile_Telephone: 303-202-4219 (org)

Contact_Electronic_Mail_Address: gs-b-npsveg@usgs.gov

Browse_Graphic:

Browse_Graphic_File_Name: <http://biology.usgs.gov/npsveg/cosw/images/coswplots.jpg>

Browse_Graphic_File_Description: 495 Kbyte, locations of vegetation plot samples; low resolution for web browsing.

Browse_Graphic_File_Type: JPEG

Security_Information:

Security_Classification_System: None

Security_Classification: None

Security_Handling_Description: None

Native_Data_Set_Environment: Microsoft Access mdb

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Physical description - For 124 sites, contains site code, site name, GPS coordinates, physical factors (elevation, slope, aspect, topographic setting, landform, surface geology, cowardin system type, hydrography, surface materials, soil texture and drainage, leaf characteristics, and physiography.

Species listing - Contains species listings for each site, listed by site code one species per line, with species type, plant code, and strata code.

Logical_Consistency_Report:

Physical description - Entries for each of the listed attributes are in the form of consistent groupings of either textual or numerical descriptors.

Species - Entries for each of the listed attributes are in the form of consistent groupings of either textual or numerical descriptors.

Completeness_Report:

Descriptive entries for each of the 124 plots are complete for each of the applicable attributes listed in the database.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

USGS-NPS Vegetation Mapping Program Congaree Swamp National Monument

Unknown. The coordinates associated with each plot are assumed to be generated from GPS receivers, but no specific information is currently available.

Lineage:

Methodology:

Methodology_Type: Field

Methodology_Description:

The methods used for the sampling and analysis of vegetation data and the development of the classification generally followed the standards outline in the Field Methods for Vegetation Mapping document <<http://biology.usgs.gov/npsveg/fieldmethods/index.html>> produced for the USGS-NPS Vegetation Mapping project. This process began with the development of a provisional list of twenty-five vegetation types from the International Classification of Ecological Communities (ICEC) that were thought to have a high likelihood of being in the park based on an initial field visit on 13-14 June, 1996.

One hundred twenty-eight plots were sampled by two two-person field teams in July, August, and September of 1996. In a deviation from the methodology outlined in the Field Methods document, initial sample points were selected in order to have plots in each of the aerial photograph signature types. The gradsect approach was rejected because there appeared to be no potential for stratifying sampling of the park based on slope, aspect, elevation, soil or other natural features due to a lack of available information. Furthermore, because of isolation from roads and trails of many portions of the park, it was deemed not feasible to use a transect to establish plot locations. After sampling, plots were tentatively assigned to the ICEC at the alliance level and our goal was to have at least five plots in each of the twenty-five provisional vegetation types. Time limitations precluded the ability of the field teams to install ten plots in each of the expected vegetation types as recommended in the Field Methods document.

During field reconnaissance in mid-July 1996, it appeared that there could be a geographic segregation, possibly by drainage, within the Monument of the vegetation types at the NVCS association level so the methodology for establishing plots was modified. In an effort to ensure that the full range of vegetation was sampled, we stratified the Monument into six zones by drainages and made sure that each signature or vegetation type was sampled at least once in each zone in which it occurred. Plots were subjectively placed using two criteria: first, that the plot be as near the middle of the delineated polygon as feasible; and second, and more importantly, that the plot be located within a homogeneous, representative portion of the polygon. Where a complete 20x50 meter plot would not fit within the representative area, a smaller plot size was used. Number of plots and plot size varied by community and by number of aerial photograph signatures assigned to a vegetation type. Generally, more widespread communities had more plots than rarer ones, and types represented by more than one photo signature had more plots than those with a monotypic signature.

The final vegetation classification and descriptions were produced using the plot data. The data were analyzed using an ordination technique, Detrended Correspondence Analysis (DCA), and a clustering algorithm, Unweighted Pair-Group Method Using Arithmetic Means (UPGMA). These clusters were used to derive the final classification units. Field

USGS-NPS Vegetation Mapping Program
Congaree Swamp National Monument

experience and judgment were used while reviewing the fit of each plot within the cluster to which it was assigned. As a result, some plots were placed in clusters other than those to which they were initially assigned based on the quantitative data analyses.

Methodology_Citation:

Citation_Information:

Originator:

Sally Landaal,
Alan Weakley,
Jim Drake

The Nature Conservancy,
Southern Conservation Science,
101 Conner Drive, Suite 302,
Chapel Hill, NC 27514
and

The Nature Conservancy,
International Headquarters,
1815 North Lynn Street,
Arlington, VA 22209

Publication_Date: 1999

Title:

USGS-NPS Vegetation Mapping Program,
Classification of the Vegetation of Congaree Swamp National Monument

Geospatial_Data_Presentation_Form: Report

Publication_Information:

Publication_Place: Denver, CO

Publisher: USGS, BRD, Center for Biological Informatics

Other_Citation_Details: Created under contract to the USGS-BRD-CBI.

Online_Linkage: <<http://biology.usgs.gov/npsveg/cosw/methods.pdf>>

Source_Information:

Source_Citation:

Citation_Information:

Originator: American Geographic Data, Inc., Wilmington, NC 28403

Publication_Date: 19960427

Title: Congaree Swamp National Monument CIR Aerial Photos

Geospatial_Data_Presentation_Form: remote sensing image

Publication_Information:

Publication_Place: Denver, CO

Publisher: USGS Center for Biological Informatics

Other_Citation_Details:

The aerial photography is near CIR 1:12000 scale.

The camera calibration report is USGS report

Number OSL/2157 dated January 17, 1996

Source_Scale_Denominator: 12000

Type_of_Source_Media: Near CIR Aerial Photos: Contact paper prints and film transparencies

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 19960427

Source_Currentness_Reference: Date of aerial photo acquisition

Source_Citation_Abbreviation: AGD

Source_Contribution:

These aerial photographs were the basis for the photointerpretation process.

Process_Step:

USGS-NPS Vegetation Mapping Program Congaree Swamp National Monument

Process_Description: See Methodology Description above
Source_Used_Citation_Abbreviation: AGD
Process_Date: 19981012

Spatial_Data_Organization_Information:
Direct_Spatial_Reference_Method: Vector

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Planar:
Grid_Coordinate_System:
Grid_Coordinate_System_Name: Universal Transverse Mercator
Universal_Transverse_Mercator:
UTM_Zone_Number: 17
Transverse_Mercator:
Longitude_of_Central_Meridian: -81
Latitude_of_Projection_Origin: 0
False_Easting: 500000
False_Northing: 0
Scale_Factor_at_Central_Meridian: 0.9996
Planar_Coordinate_Information:
Planar_Coordinate_Encoding_Method: coordinate pair
Coordinate_Representation:
Abscissa_Resolution: 1
Ordinate_Resolution: 1
Planar_Distance_Units: Meters
Geodetic_Model:
Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378137
Denominator_of_Flattening_Ratio: 298.257

Entity_and_Attribute_Information:
Overview_Description:
Entity_and_Attribute_Overview:
Physical Descriptive Data:

Plot Code: This field is the unique identifier for a Plot record. It is generated by the system, at the time a new record is entered into the database. The Plot Code is assembled from two parts: the Location Code and the Plot Code Counter, which is a sequential counter field that is increased automatically each time a Plot is entered for that Location. The sequential counter can be reset to any number you would like.

SubPlot: 'yes' if the plot is a subplot of another larger plot. Blank if the plot is not a subplot of another plot.

Polygon Code: Code indicating the vegetation polygon where the plot was taken. This is entered only if working from previously delineated photos.

Provisional Community Name: The name of the vegetation type which most closely resembles this type using the classification system.

Entered at the finest level of the classification possible. This is meant to be a field call of the vegetation classification and may change when the data are analyzed. Colloquial names can be used in this field if necessary.

Classified Community Name: The community name from the National

USGS-NPS Vegetation Mapping Program
Congaree Swamp National Monument

Vegetation Classification System, once the data are analyzed and the community has been classified.

TNC Elcode: The Elcode (Element Code) for the community element corresponding to the Classified Community Name.

Quad Name: Appropriate name/scale from survey map used; 7.5 minute quadrangle used if possible.

Quad Code: Code of USGS 7.5 minute quadrangle map.

GPS Techniques: (empty) The projection and GPS datum, plus any noteworthy comments regarding equipment and/or techniques used to process the GPS data.

Corrected UTM X: X coordinate of Universal Transverse Mercator projection after post-processing correction. Filled in at the office, not in the field.

Corrected UTM Y: Y coordinate of Universal Transverse Mercator projection after post-processing correction. Filled in at the office, not in the field.

Survey Date: Date the survey was taken; month, day, year*. *Year is entered as 4 characters, so as to avoid the "Year 2000" computer problem.

Surveyors: (empty) Names (and addresses, if appropriate) of surveyors, principle surveyor listed first.

X Dimension: The length in meters* of one side of each of the plots in which samples were taken. If the plot is circular, enter the length of its radius. If transects were used, enter their length here. The value of X Dimension should correspond to the plot specified in the Plot Shape field. *NOTE: Dimensions MUST be converted to meters.

Y Dimension: The length in meters* of the side of the plot adjacent to the side entered in the X Dimension field. The value entered in the Y Dimension field should correspond to the plot referred to in the Plot Shape and X Dimension fields. Leave this field blank if the plot is circular. Enter a one if a transect was used. *NOTE: Dimensions MUST be converted to meters.

Plot Shape: Shape which best describes that used for this sample.

Possible values are "rectangular", "square", "circular", "transect/strip", "Other"

Photos: "yes" if photos of the plot were taken at the time of sampling.

Permanent: "yes" to indicate if the plot has been permanently marked.

Slope: Degrees of slope measured using a clinometer. Possible values include "FLAT"=0°=0%, "GENTLE"=0-5°=1-9%, "MODERATE"=6-14°=10-25%, "SOMEWHAT STEEP"=15-26°=26-49%, "STEEP"=27-45°=50-100%, "VERY STEEP"=45-69°=101-275%, "ABRUPT"=70-100°=276-300%, "OVERHANG/SHELTERED"=>100°=>300%

Aspect: aspect of the slope; measured using a compass (should have been corrected for the magnetic declination). Possible Values are

"flat", "variable", N=338-22°, NE=23-67°, E=68-112°, SE=113-157°, S=158-202°, SW=203-247°, W=248-292°, NW=293-337°

Topo Position: Possible values include

"INTERFLUVE"=(crest, summit, ridge) linear top of ridge, hill, or mountain; the elevated area between two fluves (drainageways) that sheds water to the drainageways.

"HIGH SLOPE"=(shoulder slope, upper slope, convex creep slope) geomorphic component that forms the uppermost inclined surface at the top of a slope. Comprises the transition zone from backslope to summit. Surface is dominantly convex in profile and erosional in origin.

"HIGH LEVEL"=(mesa) level top of plateau.

"MIDSLOPE"=(transportational midslope, middle slope) intermediate slope position

"BACKSLOPE"=(dipslope) subset of midslopes which are steep, linear, and may include cliff segments (fall faces).

"STEP IN SLOPE"=(ledge, terracette) nearly level shelf interrupting a steep slope, rock wall, or cliff face.

"LOWSLOPE"=(lower slope, foot slope, colluvial footslope) inner gently inclined surface at the base of a slope. Surface profile is generally concave and a transition between midslope or backslope, and toe slope.

"TOESLOPE"=(alluvial toeslope) outermost gently inclined surface at base of a slope. In profile, commonly gentle and linear and characterized by alluvial deposition.

"LOW LEVEL"=(terrace) valley floor or shoreline representing the former position of an alluvial plane, lake, or shore.

"CHANNEL WALL"=(bank) sloping side of a channel.

"CHANNEL BED"=(narrow valley bottom, gully arroyo) bed of single or braided watercourse commonly barren of vegetation and formed of modern alluvium.

"BASIN FLOOR"=(depression) nearly level to gently sloping, bottom surface of a basin.

Landform: A descriptive term for the landform characteristics of the area.

Surficial Geology: a term that describes the geologic substrate influencing the plant community (bedrock or surficial materials).

Cowardin System: "Upland" if the system is not a wetland, if wetland, the name of the USFWS system which best describes its hydrology and landform. Values include

"ESTUARINE" = Deepwater tidal habitats and adjacent tidal wetlands that are usually semienclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity is above 0.5 parts per thousand, and may be periodically increased above that of the open ocean by evaporation. Along some low energy coastlines there is appreciable dilution of sea water. Off shore areas with typical estuarine plants and animals, such as red mangroves and eastern oysters are also included in the Estuarine System. The presence of halophytic plants may be used to differentiate Estuarine from other freshwater systems if there is insufficient data on salinity.

"PALUSTRINE" = Nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5 parts per thousand. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active waveformed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2m at low water; and salinity due to ocean derived salts less than 0.5 parts per thousand.

"RIVERINE" = Includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetland dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean derived

salts in excess of 0.5 parts per thousand. A channel is "an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water".

"LACUSTRINE" = Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total area exceeds 8 ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active waveformed or bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet) at low water. Lacustrine waters may be tidal or nontidal, but ocean derived salinity is always less than 0.5 parts per thousand.

Hydro Regime: The appropriate term from the following possible values "SEMPERMANENTLY FLOODED" = Surface water persists throughout growing season in most years except during periods of drought.

Land surface is normally saturated when water level drops below soil surface. Includes Cowardin's Intermittently Exposed and Semipermanently Flooded modifiers.

"SEASONALLY FLOODED" = Surface water is present for extended periods during the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is very variable, extending from saturated to a water table well below the ground surface. Includes Cowardin's Seasonal, Seasonal-Saturated, and Seasonal-Well Drained modifiers.

"SATURATED" = Surface water is seldom present, but substrate is saturated to surface for extended periods during the growing season. Equivalent to Cowardin's Saturated modifier.

"TEMPORARILY FLOODED" = Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Often characterizes flood-plain wetlands. Equivalent to Cowardin's Temporary modifier.

"INTERMITTENTLY FLOODED" = Substrate is usually exposed, but surface water can be present for variable periods without detectable seasonal periodicity. Inundation is not predictable to a given season and is dependent upon highly localized rain storms. This modifier was developed for use in the arid West for water regimes of Playa lakes, intermittent streams, and dry washes but can be used in other parts of the U.S. where appropriate. This modifier can be applied to both wetland and non-wetland situations. Equivalent to Cowardin's Intermittently Flooded modifier.

"PERMANENTLY FLOODED" = Water covers the land surface at all times of the year in all years. Equivalent to Cowardin's "permanently flooded".

"PERMANENTLY FLOODED TIDAL" = Salt water covers the land surface at all times of the year in all years. This modifier applies only to permanently flooded areas irregularly flooded by fresh tidal water. Equivalent to Cowardin's "permanently flooded/tidal".

"TIDALLY FLOODED" = flooded by the alternate rise and fall of the surface of oceans, seas, and the bays, rivers, etc. connected

USGS-NPS Vegetation Mapping Program
Congaree Swamp National Monument

to them, caused by the attraction of the moon and sun or by the back-up of water caused by unfavorable winds.

"UNKNOWN" = The water regime of the area is not known. The unit is simply described as "(wetland)".

Salinity/Halinity: Possible values include

Coastal Tidal: Saltwater - tidal = > 30 ppt

Coastal Tidal: Brackish = 0.5 - 30 ppt

Coastal Tidal: Freshwater = < 0.5 ppt

Inland: Saltwater = > 30 ppt

Inland: Brackish = 0.5 - 30 ppt

Soil Texture: Simplified Key to Soil Texture (Brewer and McCann, 1982)

A1 Soil does not remain in a ball when squeezed sand

A2 Soil remains in a ball when squeezed B

B1 Squeeze the ball between your thumb and forefinger, attempting to make a ribbon that you push up over your finger.

Soil makes no ribbon loamy sand

B2 Soil makes a ribbon; may be very short C

C1 Ribbon extends less than 1 inch before breaking D

C2 Ribbon extends 1 inch or more before breaking E

D1 Add excess water to small amount of soil;

soil feels at least slightly gritty loam or sandy loam

D2 Soil feels smooth silt loam

E1 Soil makes a ribbon that breaks when 12 inches long; cracks if bent into a ring F

E2 Soil makes a ribbon 2+ inches long; doesn't crack when bent into a ring G

F1 Add excess water to small amount of soil; soil feels at least slightly gritty sandy clay loam or clay loam

F2 Soil feels smooth silty clay loam or silt

G1 Add excess water to a small amount of soil; soil feels at least slightly gritty sandy clay or clay

G2 Soil feels smooth silty clay

Soil Drainage: Soil drainage classes are defined in terms of (1) actual moisture content (in excess of field moisture capacity), and (2) the extent of the period during which excess water is present in the plant root zone. It is recognized that permeability, level of groundwater, and seepage are factors affecting moisture status. However, because these are not easily observed or measured in the field, they cannot be used generally as criteria of moisture status. It is further recognized that soil profile morphology, for example mottling, normally, but not always, reflects soil moisture status. Although soil morphology may be a valuable field indication of moisture status, it should not be the overriding criterion. Soil drainage classes cannot be based solely on the presence or absence of mottling. Topographic position and vegetation as well as soil morphology are useful field criteria for assessing soil moisture status.

RAPIDLY DRAINED - The soil moisture content seldom exceeds field capacity in any horizon except immediately after water addition. Soils are free from any evidence of gleying throughout the profile. Rapidly drained soils are commonly coarse textured or soils on steep slopes.

WELL DRAINED - The soil moisture content does not normally exceed field capacity in any horizon (except possibly the C) for a significant part of the year. Soils are usually free from mottling in the upper 3 feet, but may be mottled below this

depth. B horizons, if present, are reddish, brownish, or yellowish.

MODERATELY WELL DRAINED - The soil moisture in excess of field capacity remains for a small but significant period of the year. Soils are commonly mottled (chroma < 2) in the lower B and C horizons or below a depth of 2 feet. The Ae horizon, if present, may be faintly mottled in fine textured soils and in medium textured soils that have a slowly permeable layer below the solum. In grassland soils the B and C horizons may be only faintly mottled and the A horizon may be relatively thick and dark.

SOMEWHAT POORLY DRAINED - The soil moisture in excess of field capacity remains in subsurface horizons for moderately long periods during the year. Soils are commonly mottled in the B and C horizons; the Ae horizon, if present, may be mottled. The matrix generally has a lower chroma than in the well drained soil on similar parent material.

POORLY DRAINED - The soil moisture in excess of field capacity remains in all horizons for a large part of the year. The soils are usually very strongly gleyed. Except in high chroma parent materials the B, if present, and upper C horizons usually have matrix colors of low chroma. Faint mottling may occur throughout.

VERY POORLY DRAINED - Free water remains at or within 12 inches of the surface most of the year. The soils are usually very strongly gleyed. Subsurface horizons usually are of low chroma and yellowish to bluish hues. Mottling may be present but at depth in the profile. Very poorly drained soils usually have a mucky or peaty surface horizon.

Leaf Phenology: The value which best describes the leaf phenology of the dominant stratum.

EVERGREEN - Greater than 75% of the total woody cover is never without green foliage.

DECIDUOUS - Greater than 75% of the total woody cover sheds its foliage simultaneously in connection with the unfavorable season.

COLD DECIDUOUS - Unfavorable season mainly characterized by winter frost.

DROUGHT DECIDUOUS - Unfavorable season mainly characterized by drought, in most cases winter-drought. Foliage is shed regularly every year. Most trees with relatively thick, fissured bark.

MIXED EVERGREEN - DECIDUOUS - Evergreen and deciduous species generally contribute 5-75% of the total woody cover.

MIXED EVERGREEN / COLD DECIDUOUS - Evergreen and cold-deciduous species admixed.

MIXED EVERGREEN / DROUGHT DECIDUOUS - Evergreen and drought-deciduous species admixed.

HERB - PERENNIAL - Herbaceous vegetation composed of more than 50% perennial species.

HERB - ANNUAL - Herbaceous vegetation composed of more than 50% annual species.

Leaf Type: The value which best describes the leaf form of the dominant stratum.

BROADLEAF - Woody vegetation primarily broadleaved (generally contribute to greater than 50% of the total woody cover).

NEEDLELEAF - Woody vegetation primarily needleleaved (generally

contribute to greater than 50% cover).

MYCROPHYLOUS - Woody cover primarily microphyllous.

GRAMINOID - Herbaceous vegetation composed of more than 50% graminoid / stipe leaf species.

BROADLEAF HERBACEOUS (FORB) - Herbaceous vegetation composed of more than 50% broadleaf forb species.

PTERIDOPHYTE - Herbaceous vegetation composed of more than 50% species with frond or frondlike leaves.

Physio Class: Physiognomic classes are determined by assessing the relative percent cover and height of the lifeform comprising the uppermost strata with cover greater than 0%. (Note: Percent canopy cover and height ranges are provided as guidelines, not strict cutoff points).

FOREST - Trees (>5m) with crowns interlocking (generally forming 60-100% cover).

WOODLAND - Trees (>5m) with crowns not touching (25-60% cover).

SPARSE WOODLAND - Trees (>5m) with crowns widely spaced (10-25% cover).

SHRUBLAND - Shrubs/Trees (0.5 - 5m) with 25-100% cover.

SPARSE SHRUBLAND - Shrubs/Trees (0.5 - 5m) with 10 - 25 % cover.

DWARF SHRUBLAND - Dwarf Shrubs/Shrubs/Trees (<0.5m) with 25-100% cover

SPARSE DWARF SHRUBLAND - Dwarf Shrubs/Shrubs/Trees (<0.5m) with 10-25% cover.

HERBACEOUS - Herbaceous plants with 10-100% cover.

SPARSE VASCULAR / NON-VASCULAR - 1-10% Vascular Vegetation.

T1 Hgt: Average height of emergent trees. 01=<0.5m, 02=0.5-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m

T1 Cover: class value that represents the average percent cover of the whole emergent tree stratum.

T2 Hgt: Average height of tree canopy. 01=<0.5m, 02=0.5-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m

T2 Cover: class value that represents the average percent cover of the whole tree canopy stratum.

T3 Hgt: Average height of tree subcanopy. 01=<0.5m, 02=0.5-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m

T3 Cover: class value that represents the average percent cover of the whole tree subcanopy stratum.

S1 Hgt: Average height of tall shrubs (<5 m). 01=<0.5m, 02=0.5-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m

S1 Cover: class value that represents the average percent cover of the whole tall shrubs stratum.

S2 Hgt: Average height of short shrubs (< 2m). 01=<0.5m, 02=0.5-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m

S2 Cover: class value that represents the average percent cover of the whole short shrubs stratum.

H Hgt: Average height of Herbaceous stratum. 01=<0.5m, 02=0.5-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m

H Cover: class value that represents the average percent cover of the whole Herbaceous stratum.

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Congaree Swamp National Monument

N Hgt: Average height of Nonvascular stratum. 01=<0.5m, 02=0.5-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m

N Cover: class value that represents the average percent cover of the whole Nonvascular stratum.

V Hgt: Average height of Vine / Liana stratum. 01=<0.5m, 02=0.5-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m

V Cover: class value that represents the average percent cover of the whole Vine / Liana stratum.

E Hgt: Average height of Epiphyte stratum. 01=<0.5m, 02=0.5-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m

E Cover: class value that represents the average percent cover of the whole Epiphyte stratum.

Other Measure1 Defined: Non-standard cover classes; 0=No data; 1=<1%; 2=1-10%; 3=10-25%; 4=25-50%; 5=50-75%; 6=75-95%; 7=>95

Other Measure2 Defined:

Animal Use Evidence: Comment on any evidence of use of the plot / polygon by non-domestic animals (i.e., tracks, scat, gopher or prairie dog mounds, etc.). Notes on domestic animals should be made in the field Disturbance Comments.

Disturbance Comments: Comment on any evidence of natural or anthropogenic disturbance and specify the source.

Other Comments: Use this field for general comments, or any comments that don't seem to fit elsewhere.

Update:

User:

Species Counter:

Optional Fields Defined: Hydrologic zones

Opt1: Hydrologic zone number

Species Listing Data for Plots:

Plot Code: This field is the unique identifier for a Plot record. It is generated by the system, at the time a new record is entered into the database. The Plot Code is assembled from two parts: the Location Code and the Plot Code Counter, which is a sequential counter field that is increased automatically each time a Plot is entered for that Location. The sequential counter can be reset to any number you would like.

Plant Symbol: The symbol field provides a quick and easy way to search for a species name in the PLANTS database. It generally consists of the first two characters of the Genus name, plus the first two characters of the Species name. Identical symbol codes that are for different species names are appended with tie-breaker characters.

Scientific Name: The scientific name for an individual species record within the NRCS PLANTS Database. As supplied by the NRCS, this field also contains authority information. This field is used as validation data when a species' name is entered into the Species Scientific Name field in either the Plots or the AA Observations table.

Common Name: The common name for an individual species record within the NRCS PLANTS Database.

Family: The family name for an individual species within the NRCS PLANTS Database.

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Congaree Swamp National Monument

Used PLANTS: This field will be automatically checked if the name appearing in the Species Scientific Name field is found in the PLANTS database. Note that the automatic check-off will only take place if there is an exact match between the Species Scientific Name and the name as listed in PLANTS.

Source: This field indicates the source of the name record in the PLANTS Database. Values are:

SS=Standard Source (e.g. the NRCS PLANTS list),

NS=Non-standard Source (any source other than NRCS),

SY=Accepted synonym by NRCS list.

Within Plot:

Stratum Sort: The stratum in which this species occurs. T1=Emergent Tree,

T2= Tree Canopy, T3=Tree Subcanopy, S1=Tall Shrub (>5m),

S2=Short Shrub (<2m), S3=Dwarf-Shrub, H=Herbaceous, N=Nonvascular,

E=Epiphyte, V=Vine/Liana.

Diagnostic: This is to be checked if the species is known to be diagnostic of the vegetation type.

Other Measure1:

Other Measure2:

Update:

User:

Entity_and_Attribute_Detail_Citation:

Grossman, D. Et al. 1994. National Park Service

Vegetation Mapping Project,

Standardized National Vegetation Classification System 209 pp.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: USGS-NPS Vegetation Mapping Program Coordinator

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Contact_Facsimile_Telephone: 303-202-4219 (org)

Contact_Electronic_Mail_Address: gs-b-npsveg@usgs.gov

Resource_Description: COSW Veg Map

Distribution_Liability:

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Standard_Order_Process:

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Digital_Transfer_Information:

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Online_Option:

Computer_Contact_Information:

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Network_Resource_Name: <http://biology.usgs.gov/npsveg/cosw/fielddata.html>

Fees: None

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Metadata_Date: 200110

Metadata_Review_Date: 20050518

Metadata_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: USGS-NPS Vegetation Mapping Program Coordinator

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Metadata_Standard_Name: FGDC-STD-001.1-1999 Content Standard for Digital Geospatial Metadata, 1998 Part 1:
Biological Data Profile, 1999

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Extensions:

Online_Linkage: <http://biology.usgs.gov/fgdc.bio/bionwext.txt>

Profile_Name: Biological Data Profile FGDC-STD-001.1-1999